Complete Summary

TITLE

Sepsis: percent of patients with severe sepsis/septic shock who had 2 sets of blood cultures collected within 24 hours following severe sepsis/septic shock identification.

SOURCE(S)

VHA, Inc. Transformation of the intensive care unit: sepsis data collection toolkit. Irving (TX): VHA, Inc.; 2007 Jan 1. 29 p.

Measure Domain

PRIMARY MEASURE DOMAIN

Process

The validity of measures depends on how they are built. By examining the key building blocks of a measure, you can assess its validity for your purpose. For more information, visit the Measure Validity page.

SECONDARY MEASURE DOMAIN

Does not apply to this measure

Brief Abstract

DESCRIPTION

This measure is used to assess the percent of patients with a severe sepsis/septic shock who had 2 sets of blood cultures collected within 24 hours following severe sepsis/septic shock identification.

RATIONALE

Studies show that annually there are between 500,000 to one million cases of sepsis and severe sepsis in American hospitals. The annual mortality rate for these cases is between 15 and 30 percent or as many as 200,000 deaths. Many more patients suffer from permanent organ damage. The cost to society in dollars spent and lives lost prematurely is enormous. While there are many useful clinical interventions, research shows that they are applied inconsistently, if at all.

Patients admitted to the Intensive Care Unit (ICU) with severe sepsis should have two sets of peripheral blood cultures collected immediately. Because we cannot differentiate between bacteremia and a contaminated central line, blood cultures drawn through a central line are of little value and should be avoided. All potential sites of infection should also be cultured. Source control is essential when there is a focal origin of infection.

PRIMARY CLINICAL COMPONENT

Severe sepsis; septic shock; blood cultures

DENOMINATOR DESCRIPTION

Total number of patients, 16 years of age and older, with a diagnosis of severe sepsis/septic shock (see the related "Denominator Inclusions/Exclusions" field in the Complete Summary)

NUMERATOR DESCRIPTION

Number of patients who had 2 sets of blood cultures collected within 24 hours prior to and 24 hours following severe sepsis/septic shock identification (see the related "Numerator Inclusions/Exclusions" field in the Complete Summary)

Evidence Supporting the Measure

EVIDENCE SUPPORTING THE CRITERION OF QUALITY

- A clinical practice guideline or other peer-reviewed synthesis of the clinical evidence
- One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Evidence Supporting Need for the Measure

NEED FOR THE MEASURE

Unspecified

State of Use of the Measure

STATE OF USE

Current routine use

CURRENT USE

Collaborative inter-organizational quality improvement
Internal quality improvement
Quality of care research

Application of Measure in its Current Use

CARE SETTING

Hospitals

PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Advanced Practice Nurses
Nurses
Physicians

LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Single Health Care Delivery Organizations

TARGET POPULATION AGE

Age greater than or equal to 16 years

TARGET POPULATION GENDER

Either male or female

STRATIFICATION BY VULNERABLE POPULATIONS

Unspecified

Characteristics of the Primary Clinical Component

INCIDENCE/PREVALENCE

See the "Rationale" field.

ASSOCIATION WITH VULNERABLE POPULATIONS

Unspecified

BURDEN OF ILLNESS

See the "Rationale" field.

UTILIZATION

Unspecified

COSTS

A study confirmed that patients with severe sepsis consume significant resources. The average hospital length of stay was 20 days at an average cost of $22,100. National cost estimates for the care of severe sepsis based on this study is $16.7 billion dollars, with the care of patients older than 65 costing $8.7 billion (52.3 percent), and care of those older than 75 costs $5.1 billion dollars (30.8 percent). The costs for caring for patients with sepsis are projected to rise approximately 1.5 percent per year due to the aging U.S. population.

EVIDENCE FOR COSTS

VHA, Inc. Improving sepsis care in the intensive care unit: an evidence-based approach. Irving (TX): VHA, Inc.; 2004. 60 p.

Institute of Medicine National Healthcare Quality Report Categories

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness

Data Collection for the Measure

CASE FINDING

Users of care only

DESCRIPTION OF CASE FINDING

Patients, 16 years of age and older, with a diagnosis of severe sepsis/septic shock

DENOMINATOR SAMPLING FRAME

Patients associated with provider

DENOMINATOR INCLUSIONS/EXCLUSIONS

Inclusions
Total number of patients, 16 years of age and older, with a diagnosis of severe sepsis/septic shock*

*Refer to the original measure documentation for definitions and additional details.

Exclusions
Any one of the following:

- Patients less than 16 years of age

- Not Applicable because: care was withdrawn or patient expired within 24 hours following severe sepsis/septic shock identification
- Date or Time of severe sepsis/septic shock identification unknown
- Cases with a time elapsed EARLIER THAN -24 hours or GREATER THAN +72 hours. Time elapsed is the difference between severe sepsis/septic shock identification and the collection of two blood cultures.

RELATIONSHIP OF DENOMINATOR TO NUMERATOR

All cases in the denominator are equally eligible to appear in the numerator

DENOMINATOR (INDEX) EVENT

Clinical Condition
Institutionalization

DENOMINATOR TIME WINDOW

Time window brackets index event

NUMERATOR INCLUSIONS/EXCLUSIONS

Inclusions
Number of patients who had 2 sets of blood cultures collected within 24 hours prior to and 24 hours following severe sepsis/septic shock identification

Note:

- Time elapsed between the first blood culture collection & severe sepsis/septic shock identification is between –24 hours and +24 hours AND
- Time elapsed between the second blood culture collection & severe sepsis/septic shock identification is between –24 hours and +24 hours

Exclusions
Any one of the following:

- Date or Time of the first blood culture collection is unknown
- Date or Time of the second blood culture collection is unknown
- First blood culture was "Not collected"
- Second blood culture was "Not collected"

MEASURE RESULTS UNDER CONTROL OF HEALTH CARE PROFESSIONALS, ORGANIZATIONS AND/OR POLICYMAKERS

The measure results are somewhat or substantially under the control of the health care professionals, organizations and/or policymakers to whom the measure applies.

NUMERATOR TIME WINDOW

Fixed time period

DATA SOURCE

Medical record

LEVEL OF DETERMINATION OF QUALITY

Individual Case

PRE-EXISTING INSTRUMENT USED

Unspecified

Computation of the Measure

SCORING

Rate

INTERPRETATION OF SCORE

Better quality is associated with a higher score

ALLOWANCE FOR PATIENT FACTORS

Unspecified

STANDARD OF COMPARISON

Internal time comparison

Evaluation of Measure Properties

EXTENT OF MEASURE TESTING

Unspecified

Identifying Information

ORIGINAL TITLE

Blood cultures collected within 24 hours following severe sepsis/septic shock identification.

MEASURE COLLECTION

Transformation of the Intensive Care Unit (TICU) Measures

MEASURE SET NAME

Sepsis Quality Indicators

DEVELOPER

VHA, Inc.

FUNDING SOURCE(S)

VHA, Inc.

COMPOSITION OF THE GROUP THAT DEVELOPED THE MEASURE

Internal VHA, Inc. clinical subject matter experts along with external clinical subject matter faculty experts from various National and local research medical centers/hospitals

FINANCIAL DISCLOSURES/OTHER POTENTIAL CONFLICTS OF INTEREST

None; work was not supported by any third party vendors, contractors or for-profit health care companies including suppliers, device makers, or pharmaceutical firms.

ADAPTATION

Measure was not adapted from another source.

RELEASE DATE

2004 Jan

REVISION DATE

2007 Jan

MEASURE STATUS

This is the current release of the measure.

SOURCE(S)

VHA, Inc. Transformation of the intensive care unit: sepsis data collection toolkit. Irving (TX): VHA, Inc.; 2007 Jan 1. 29 p.

MEASURE AVAILABILITY

The individual measure, "Blood Cultures Collected Within 24 Hours Following Severe Sepsis/Septic Shock Identification," is published in "Transformation of the Intensive Care Unit: Sepsis Data Collection Toolkit."

For more information, contact VHA, Inc. at: 220 E. Las Colinas Blvd., Irving, TX 75039; Phone: 1-800-842-5146 or 1-972-830-0626; Web site: www.vha.com.

COMPANION DOCUMENTS

The following is available:

- VHA, Inc. Improving Sepsis Care in the Intensive Care Unit: An Evidence-Based Approach. Irving (TX): VHA, Inc.; 2004. 60 p.

For more information, contact VHA, Inc. at: 220 E. Las Colinas Blvd., Irving, TX 75039; Phone: 1-800-842-5146 or 1-972-830-0626; Web site: www.vha.com.

NQMC STATUS

This NQMC summary was completed by ECRI Institute on September 23, 2008. The information was verified by the measure developer on November 13, 2008.

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